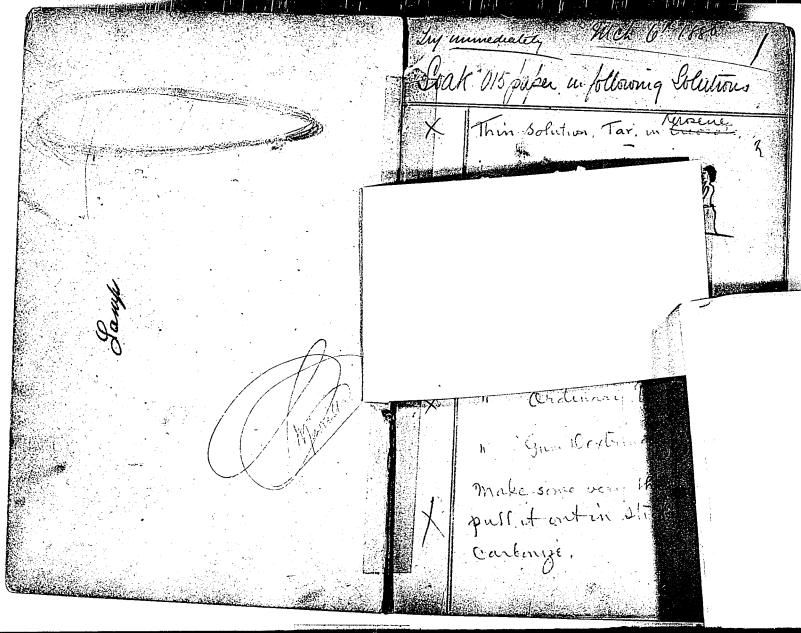
Menlo Park Notebook #57 [N-80-03-06]

This notebook covers the period March-October 1880. Most of the entries are by Charles Batchelor and Charles Flammer. There are also a few entries by Edison. The name of Martin Force appears occasionally as a witness. Many of the notes and drawings relate to experiments in treating carbonized paper and fiber. Most of these are numbered. There are also notes and drawings of clamps, internal connections, carbon molds, and devices to straighten the carbons. One set of notes and drawings relates to a series of vacuum pump experiments. The label on the front cover is marked "Carbons" and "C. Batchelor." The book contains 284 numbered pages.

Blank pages not filmed: 270-277, 282-283.

Missing page numbers: 75-76.


Dry immediately
March 6th 1888
Soak 015 paper in following Solutions
X
Thin Solution, Tar. in Naptha
Large
Ordinary
Gum Crystal
Make some very
pull it out in
Carbonyl.

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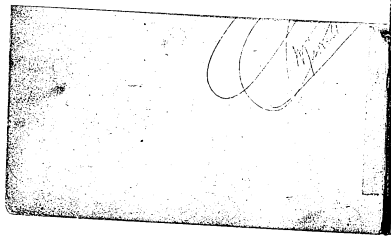
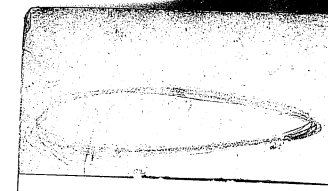




By immediately, March 6th 1880

Oak .015 paper in following Solutions

X Thin Solution Tar. in Benzine

Tar Rubber Net

X Soaked in

X Soaked in

X " Venice Turpentine

X " Linseed Oil

" Gum Gutta

X Make some very thin oak & pull it out in sticks and Cartonize.

2

3

My immediately Mcl 1st 1880
Soak paper in following. Edward Ratcliffe
M. M. Force

X Tragacanth.

X Soak in Anthracene in its best solvent.

X Soak in Naphthaline in its best solvent,

~~Finish off~~ Quickly –

Take a piece of Tin foil
Cut it art size small loop
paint it with syrup of
plumbago & sugar,
lay on ~~[illegible]~~ on tin
plate & bring up to melt
tough then put in lamp

Samples

Started 8th 1890

Chas H Batchelor
M. A. Force

841 Card 134 Book 10
Manilla fibre - very thick - picked - copperplated

842 Card 129 Book 7
Palmetto leaf fibre — coppered —

843 Palmetto leaf - coppered
844

C.135 Card 145
845 Two threads

846 Wire grass from Florida
847 Coppered
Bad place at top —

Dec. 5. 1900

Try immediately. —

Chas. Batchelor
M. M. Prop.

Take ordinary small loops of #5 pressed & dry and after carbonizing - place them in hydrofluoric acid & dissolve out the glassy matter that has been formed there by the intense heat

Take some very fine Sea Island cotton fibres (single) and make loops

Take some very fine Bass fibres and coat with plumbago and sugar

Soak some in Gelatin

Soak some in Cyanide of NH_4

Soak some in Cyanide of K

8

Lamps

9

848 Palmetto leaf fibre – copper.
849

850 Small loop soaked in
851 starch and H2O and
852 Pressed carb 154
853

854 Palmetto Leaf
855 Copper
856

857 Small loop of 815 soaked
858 in Sulphate Ammonia
859 and pressed
860 Carb 150
861 871
862 872
863 873
864 874
865 875
866 876
867 877
868 878
869 879
870 880 881

Carburization Mch 8 1880 1
Aberpatchetor
M. M Prop

141	Plumbago Cup Venice Lamps, rolled to stock and bent to Shape
142	Small loops-·015 Soaked in
143	Turpentine and pressed
144	Piece Rosin with plumbago, made hot when cool it dries hard very hard but a little too flinty
145	Plumbago & Tar have rolled bent to shape
146	Ditto - as 145 -
147	Small loop ·015 Soaked in Amber oil and pressed

Cartonization Mch 9 1880 3
Chas Batchelder
M. M. Force

148	Venice turpentine and Plumbago
149	Same as 147
150	3 small loops of .005 soaked in Sulphate Ammonia and pressed
151	Small loops .015 — soaked in Resin in alcohol. — pressed —
152	Small loop .015 soaked in Naphtaline dissolved in Bi Sulph Carb, & pressed

Cantonization Mch 9 1880 [illegible]
Chas Balcheller
M. D. Troy

153	Small loop .015 Soaked a. Tar dissolved in Kerosene Air pressed
154	Small loop Soaked in Starch Austro & pressed
155	Small loop (Tragacanth) Soaked in
156	Large Loop Soaked in Sub. Ammonia
157	Mixture of Plumbago Made by Mc Kenzie — 3 mi long — Laing on tissue paper —

Lamps

Mch 13th 1880
Chas Batchelor

882 (149) 883 884	Small loop .015 soaked in ~~oil~~ Aniline oil and Pressed carb 149
885	Carb 155 Small loop soaked in Tungstate
886 887	Small ~~loops~~ - .015 impressed pressed to .007 - treated with Hydrofluoric acid and plated with ~~Copper~~
888 889	Pair 153 Small loops - .015 impressed - ~~pressed~~ Soaked in Tar dissolved in Kerosene Coppered

Lamps

Mel 13 1880
Chas Batchelor
M A Forrest

890	Carb 152 Small loops .015
891	Naphthalene dissolved in Benzine
& 92	Carbon and pressed & .007 Copperred
~~893~~	Carb 150.
894	Small loops — .015 uncal. paper
895	Soaked in Sulphate Ammonia
~~896~~	pressed & .007 — copperred
~~897~~	
~~898~~	
~~899~~	did not use these lamps
~~900~~	Broke them up to get lamps
~~901~~	
~~902~~	
903	carb 147 Small loop .015 soaked
904	in Naptaline oil and pressed
905	Cop.
906	Carb 156 Small loop .015 uncal paper Soaked in Resin dissolved in alcohol and pressed — Cop —

Carbonization Mch 13 1880

Chas Batchelor
M. M. Tracy

158 Plumbago and
Made by McKenzie — laid on
carbonized tissue sheets in mould

159 Plumbago and
Made by McKenzie
without tissues

160 Finale coop — .015 uncal foper
Soaked in Resin dissolved in
Alcohol and pressed & .007

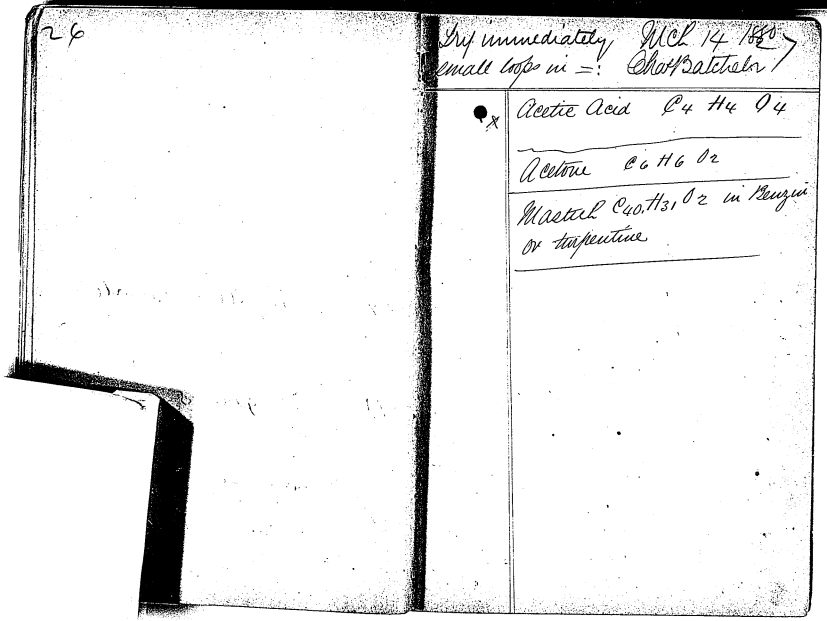
161 Bass fibres Coated with
Plumbago and sugar

Carbonization Mcl 14th 1880 2
Chas Batchelor

162	Manilla fibres picked
163	Small loops .015 impressed soaked in Anthracine in Lamp. and pressed .007
164	Cocoa nut fibres picked
165	Black linen - from Florida with joints in it -
166	Ramie fibres - a number together - It is almost impossible to pick them to get a single fibre of any length.

Carbonization March 14 1880
Chas Batchelor

167	Bass fibres small all Broke
168	Small loop soaked in Resin and Alcohol Ress to finish
169	Bass fibres small — — — finish
170	wire grass 3 loops
171	3 Small loop and 3 large loop Acetic acid Dressed from 0'15 to 0'07 3 large loops to finish Red


24
Dry immediately MCL 14 1820
small tops in =: Hoff Batchelor
Acetic Acid $C_4 H_4 O_4$
Acetone $C_6 H_6 O_2$
Mastich $C_{40} H_{31} O_2$ in Benzin
or turpentine

March 1875

Lamps

907 Small loop .015 impressed soaked in Anthracine in Turpentine and pressed 907 Carb 163 Copbered

909. 910. First pressed plumbago small loop from new mould made by Dean stone paper on both sides of loop Copbered

911 912 913 Picked fibers Menilkie small Carb 162 Copbered

914, Carb 160 small loop .015 uncal paper soaked in resin Dissolved in alcohol and pressed to 907 Copbered

Carbonization March — 1880

172 fibers from the young Palmetto leaf

173 3 small loops and 3 large loops Gelatine solution Pressed 016 to 017 large loop to height the

174 Small loop of Molasses dark brown 015 Pressed to

175 Nile Grass large loop

Lamps

March 1933

915	1 foot round fiber were grass Coppered Carb 127
916	Bass fiber coated with Flamingo and Sugar Carb 161 Coppered
917	Manilla fibers picked Carb 162
918	
919	
920	Coppered
921	Manilla fibres - Carb 162
922	Coppered
923	
924	
925	

March 17 1880

Lamps

926	Cocos Nut fibers [illegible]
927	covered ends carb 164
928	
929	small loop Soaked in
930	Acitic acid Pressed
	015 — 007 carb 171
931	wire grass coper ends
	carb 170
coper 932	small loop Gelitine
Nickel 933	solution Pressed 015 — 007
Silver 934	carb 173
	Nickel coper and silver
	Plated ends

Gramko

March 18th 37

935 942
936 943
937 944
938 945
939 946
940 947
941 948
949

Small loop Cork 174
Molasses Mixture
No Pressed Tops 007.

950
951

wire grass Plumbago ends
Cork 175

952

Books

Copper 953
Copper 954
Copper 955
Plumbago 956

fish from the spring
Palmetto Leaf Cork 172

957
958

Cork 165
Black Moss from Florida with pointed ends
Copper Plat ends

Carbonization March 18th 1903
Chas Batcheller

176	Plumbago pressed between tissue sheets cut out and soaked in Molasses.
177	Minilla fibers 2 Bunches picked Broke in moulds
178	Small loops soaked in Cyanide K. — pressed to 007.
179	Manilla fibres — with moulded plumbago ends

90

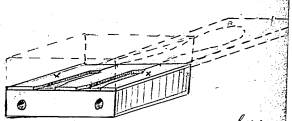
Lamps

March—1900 x/

959	Cocoa Nut fiber
960	
961	of Picked Cork 164
962	
963	Plushage on ends
964	
965	fiber from the young Palmetto leaf cork 172 silver Plat ends
966	Cork 169
967	Bass fibers smooth
968	copper Plat ends.
~~Cork 169~~	~~Plushage on ends~~
	~~Made by McK~~
~~copyrighted~~	

Mch. 16th 1880

New Mould for moulding plumbago ends on Fibres after Carbonizing



xx only held by steady pins

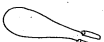
Piece of back of this to keep punches from pushing back all surface hardened and polished

Chas Batchelor

Made by C Dean

Dec 14 1880 VJ

Devices for keeping the ends of fibres straight whilst Carbonizing —



Platina sleeve.

Nickel clamp.

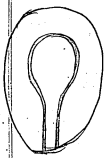
Nickel - sawed slots in it

Nickel block with forming block on it round which the fibre is stretched & tied and put loosely through holes at XX as it shrinks it pulls through and always keeps good shape

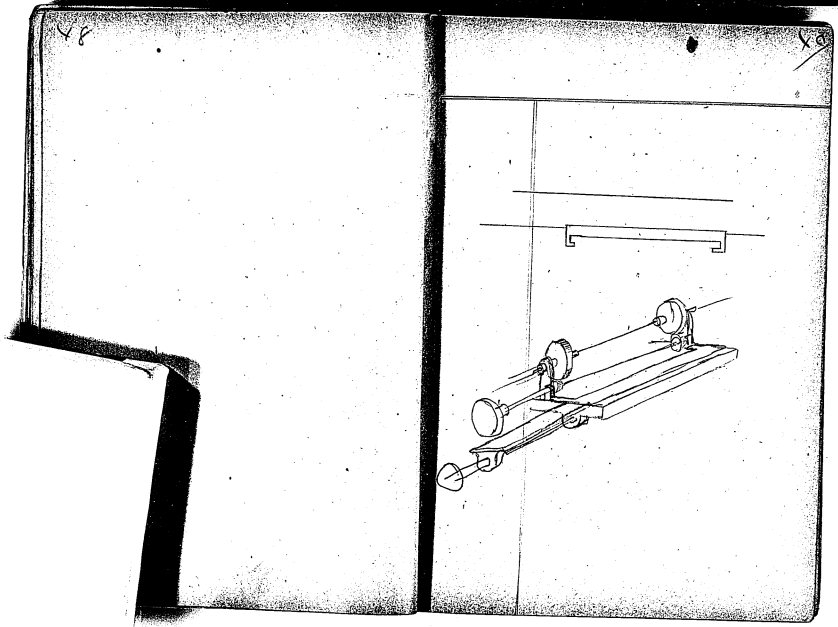
Chromatin

Device for Keeping ends of fibres straight
whilst carding ing

Mch 19 1860



Nickel plate with groove
in shape of loop
polished out as as to
slip



58

Carbonization March 18th 1880 S/

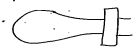
Chas Batchelor

180. Manilla fibres - soaked and bent to shape

181 Plumbago ?
Made by McKenzie —

182 Piece of reed paper (Thick)
sent by Jno Wales Penna
looks like Gold beaters skin

183. One Manilla fibre held by piece of nickel in place



Carbonization March 23 1909 3

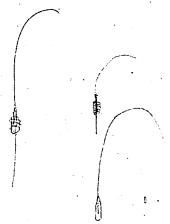
184 Lot of Manilla fibres together in groove

185 Burnet Manilla fibres
186

187 large loop cut from Whiting paper company's Sample No 3

188 2 manila fibers in new Bar clamps by Batchelor Dr. C.F.

See page 63



Clamps

March 24 93

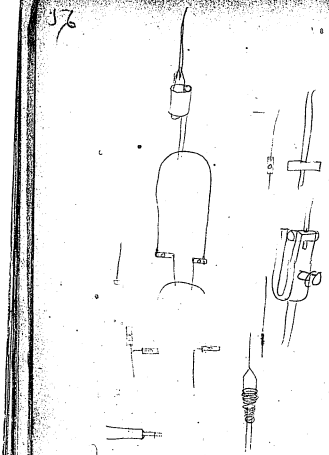
969 Manilla fibers Carb 189
970 Plumbago on ends of carbons
971
972

973 Manilla fibre – clamp of Plumbago moulded ~~on~~ with hole in and fibre stuck in hole and clamped with flat-side-clamp this did not clamp good it stood this way So was not a fair test

974 Carb 189
975 Clamp work cut from
976 Whitby Lava Co
977 Clamps of ~~Lava~~ Lava Plumbago
978 on ends of carbon put on
979 Hughes

March 23rd 1880

Chas Batchelor



Make clamps of Bast fibre :—
.015 thick and .075 long before carbonizing. — Pointed and a .0065 hole through so that the fibres will just push in — Then Carbonize —
To hold this we will make a spiral (10mm) of platinum wire, that is two sizes, made on a mandrel as :—

the small end to go on the .0010 wire (or .007 if we use it) and the large end to set the ~~Carbon~~ clamp in.

In order to make them clamps we will pack out the fibres about the right size and draw them through a given

March 23 1875 59

Chas Batchelor

die which cuts them to .025 thick these are then put in our little screw machine milled down - drilled - and pointed

Cut some of them double length to try experiments

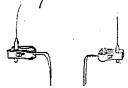
We are also taking pieces fibre (Bast) and cutting them off and drilling as: ⊕ crosswise and clamping the crosspiece in our ordinary clamps.

(20)

Mch 23 1880

Char Batteries

We will clamp this clamp also this way



Also this way

62

188	Page 53 — These Clamps are Bast fibres the Manilla fibres are 5 thousandths and 3 inch long
189	6 Manilla fibres with Bast clamps .015 thick fibres 2" long " .005 thick
190	Manilla Fibres .007 — ~~5 in~~ length 2.5 inches Bast Clamps .0625 long .025 thick
191	Vegetable Wool.

Lamps March 26 1880

Chas Batchelor

980 Mamel a fibre .005 thick
3.5 mel long
Bast clamps set in spring
cups and pure platinum
set in —
Measures 2800 ohms before
going on pump
Platinum Arc in one clamp

Cop.

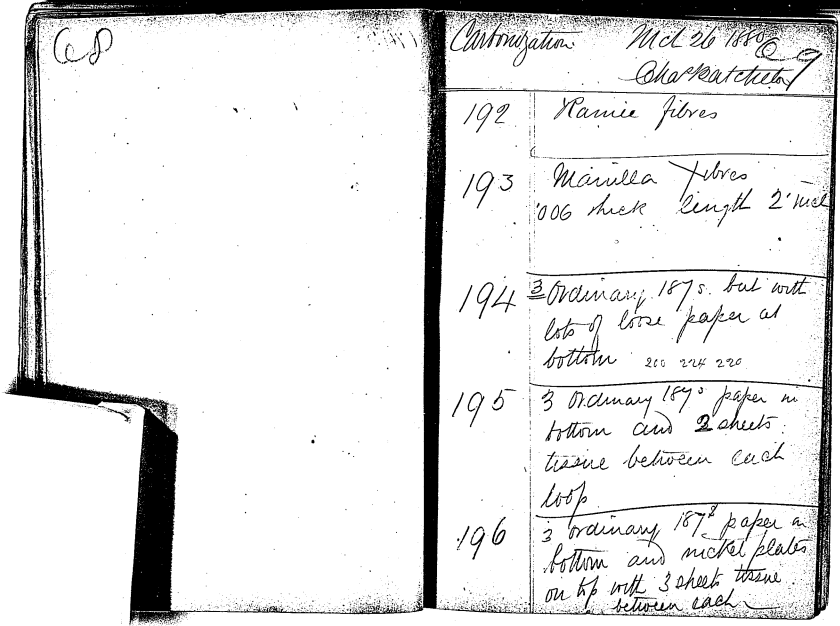
Leaves

March 26 1881

980 Cork 181
981 Leaves single and grouped
982 writing paper &c
983 [illegible] Plantago
[illegible]

984 Manilla fibre
2 in long
.005 thick
Bast clamp
small edge.

985 Manilla fibre
986 2½ inch long.



Carbonization Mch 26 1888 Q 9
Characteristics

192 Ramie fibres

193 Manilla fibres
.006 thick length 2" wide

194 3 Ordinary 187s. but with
lots of loose paper at
bottom 210 224 220

195 3 Ordinary 187s paper on
bottom and 2 sheets
tissue between each
loop

196 3 ordinary 187s paper on
bottom and nickel plated
on top with 3 sheet tissue
between each

196 — 6 tissue sheets bottom
6 " on top
3 between each loop
nickel plate on top

197 — 4 tissue sheets bottom
on nickel plate
3 sheets between each
loop
4 sheets top
carbon on top

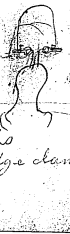
198 — Paper at bottom
carbon plate top & bottom
high resistance

199 — 3 sheets tissue between
each loop
tissue at bottom

206-206 & 2121

March 29 1875

987	Manilla fibre
988	
989	
990	Mineta fibre
991	oak clamps
	each X 264
992	
993	
	each 206
994	Manilla fibre
	oak clamps
	see top page 61
995	Manilla fibre
	oak clamps
	with iron wedge clamp



200 Lot of tissue on bottom
nickel plate
3 tissue sheets top and bottom
2 sheets between each loop
tissue on top

201 Details

In carbonizing we find that 3 sheets between each loop makes less R.

202 Det top 3 at bottom } loose paper
3 between } at bottom
3 top
Nickel plate on top

At Mallory add 2 more nickel plates

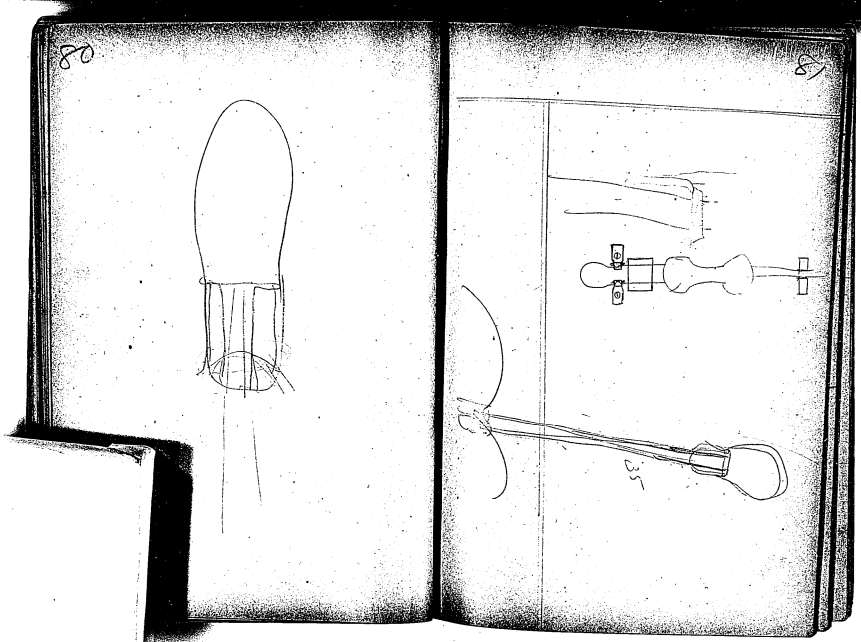
We also find that nickel on top is not a bad thing as the only mould we tried it on is very low 192 ohms but this may be due to the 3 sheets between each loop

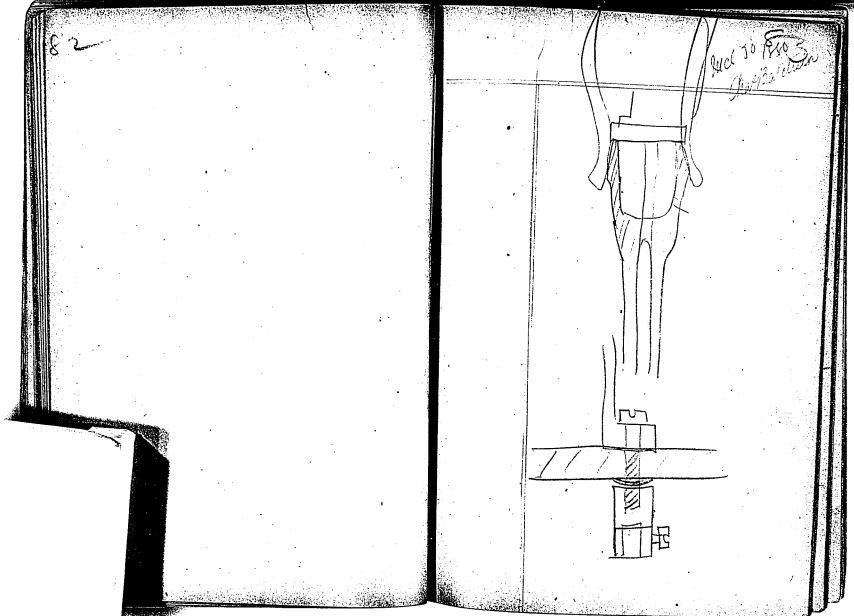
Carb. March 30 1881

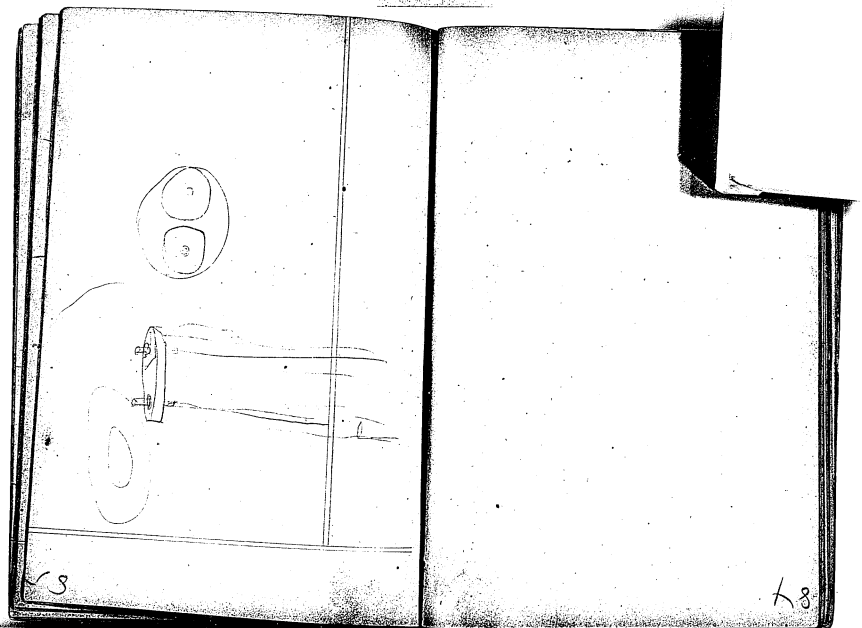
203 Lost time at Bolton
Nickel plat
2 Hum
1 Bat — loop
2 on
carbon 1/8 on top
bot

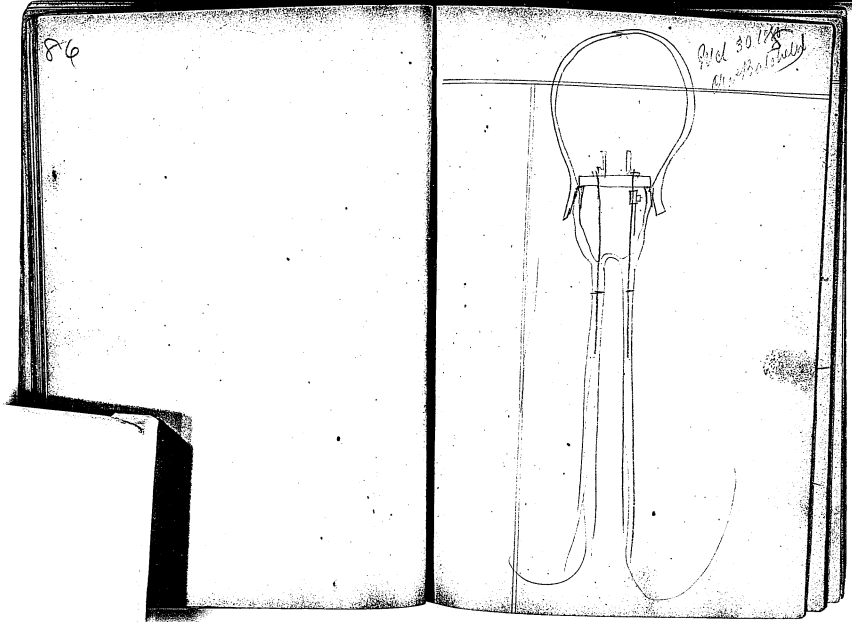
204 2 moulds 5 007 Mainlea
2½ long in oak clamps

~~Ess~~ Today on taking out the
moulds 15 moulds. which
shows us that
3 sheets between each
and nickel plate
on top are the best
Yet


80
81



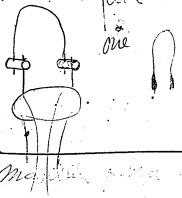




March 8
30th 1884

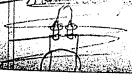
206 Manilla lamp with clamps made of [illegible] particulars see Lamps 984

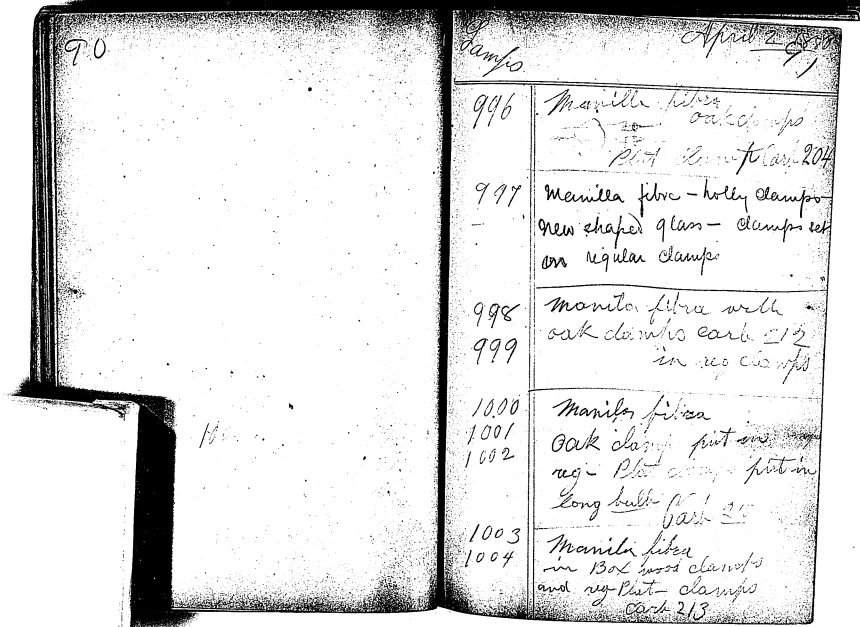
207 Manilla fibre and [illegible]



205 Manilla rope and [illegible] down

~~206~~ Manilla fibre [illegible]





TO

Clamps. April 2 1898 91

996 Manilla fibre oak clamps
Plain [illegible] Card 204

997 Manilla fibre – holley clamps
New shaped glass – clamps set
on regular clamps

998 Manila fibre with
999 oak clamps card 212
in reg clamps

1000 Manila fibre
1001 Oak clamps put in reg
1002 Plain clamps put in
Long bulb Card [illegible]

1003 Manila fibre
1004 in Box wood clamps
and reg Plain clamps
Card 213

92

Carbonization. Apl. 2 1880 93
Charcoal etcher

208 3 Manilla fibres — Box wood ends N.G. Put in tissue paper with holes cut in so that clamps can have room

209x Same but with no holes in tissue paper

210 6 Manileas — boxwood clamps — carbonized in plots of nickel plate

211 Double Manilla fibre in oak clamps

Carbonization Apr 3rd 1907

W. H. Tarr

212 Manilla fibres – oak clamps –

213 9 Manillas – boxwood clamps – Carbonized in plots of Nickel plate plots filled in with paste board to hold them in place

214 One double manilla fibre in boxwood clamps

215 2 Double Manilla fibres & four single Manillas in oak clamps – Good

Had Double clamps Commutator head 3 Double clamps Armature head 3 Double clamps Commutator head 3 Double clamps Armature head 3 Carbonized

216 One Manilla fibre between two nickel plates boxwood clamps

Carbonization Apr 5th 1890 97

217 Large bunch fibre Manilla laid on 5 Trays then packed all round + inside with Cuttings Then Cuttings over then Tissue + heavy nickel plate – Pressed down – Lid shut down

218 3 Big pape Carbon 15 Tissues between 4 each over last put Cuttings then nickel plate – Lid shut down – 226 – 2½ – Sound + very good

219 66 Manilla fibres put in with a sheet of tissue between each fibre then a heavy nickel plate to weight them down then packed in with cuttings

98

Lamps

April 8 1898

Chas Hammer

1005 2 Manilla fibres in old style clamps with 2 holes drilled in them To clamps on box wood clamps

1006 Manilla fibre

1007 Box wood on ends of fibre

1008 old style clamps

1009 1 loop made of gum wood fibre in old style clamps

Carb 233

1010 2 loops made of White

1011 Holley fibre in old style clamps.

Carb 228

Cards April 8/1937

220 5 single and
2 Double fibers in
slots of [illegible] plate
Box wood

221 [illegible]
[illegible] ends are
held in [illegible] plate

222 5 loops cut from Box
wood and bent in shape
so [illegible] ends held in
slots of nickel plate
and weighted with cards
[illegible] the nickel plate
on top with pieces of card
paper

223 6 ~~loops~~ cut from
willow Cards same as 222

Carb April 8th

224	5 single fibers ss 2 Double " " Oak clamps weighted with carbon
225	3 [illegible] cut [illegible] Bass wood and shaved [illegible] [illegible] cut in Ex. wood [illegible] Photo of a Horse Hair paper
226	4 fibers cut from the [illegible] wood and heat with Steam [illegible] held in steel [illegible]
227	Manilla fiber with oak clamps carbon [illegible] of Nickel Plate weighted with carbon

Card April 25

228 2 loops mad. from White [illegible] wood — bent with steam in shape [illegible] 6 times. [illegible] on top and bottom

229 2 loops made of Basswood bent same as 228. but when not steamed enough broke in bending. them bent plant

230 4 loops made of ash wood bent same as 228 bent very good

10b

Cook — April 10 1916

231 2 loops made of White Holly bent edge ways with grain.

232 4 loops made of French Poplar and bent edge ways and cork — same as [illegible] loops 2 in a mould

233 2 loops made of Green wood [illegible]

234 White pine page 111 Garip 10¼ x 10½

235 Dog wood page 111 Garip 1.1½ x 1.1½

Carbonization Apr 12 1915 109

236 Peach wood see page 111
Sample 1014 x 1015

237 Gum wood see page 111
Sample 1014 x 1015

238 Maple wood see page 111
Sample 1014 x 1015

239 Ash wood see page 111
Sample 1014 x 1015

Samples

April 15th 1861

10 Oz 1983 Box wood [illegible] and [illegible] put in old [illegible] clamps [illegible] mills cane as a [illegible] Cash 222

April 15

10 14 2 loops made of Gum

10 15 wood [illegible] by Dean so [illegible] wire Steamed and bent in shape so [illegible] Thos Cash

with 3 sheets of tissue paper between cork body and heavy nickel plate on top cork very good

Corks 237

Card April 18/13

240	Red cedar see page 111 Lamps 1014 × 1015
241	Beech wood see page 111 Lamps 1014 - 1015
242	are one ash and one Bass Steamed and Press to [redacted]
243	French poplin page 111 Lamps 1014 × 1015
244	Black Walnut page 111 Lamps 1014 × 1015

Card April 4/15

24.5 Amaranth wood see page 111

Sawfo 1/4 x 1 1/16

April 15

246 6 Hybrid loops made from White Kidney spirit in 3 moulds in different ways:

Mould in mould:
- 3 staves on bottom
- 3 between each loop
- 3 on top
- 1 heavy plate on top

2
- 3 staves on bottom
- 2 between each loop
- 3 on top
- 2 light plates on top

Not cast

These loops where cut near way [illegible]

These

They are not right cut these places on them

1 heavy plate

6 staves on bottom 6 between each loop

Lamps April 18 1917

1016	Red Cedar
1017	Cark same as 1014 x 1015 page 111 2 good book
1018	~~Primary~~ wood Rosewood Cark same as 1014 x 1015 page 111 1 good book Cark 236
1019 1020	Amaranth wood Cark same as 1014 x 1015 page 111 Cark 245
1021 1022	Maple wood Cark same as 1014 x 1015 page 111 cark 238
1023	Black Walnut Cark same as 1014 x 1015 page 111 . cark 24

Lamps April 18th 17

1016	Red Cedar
1017	Cark same as 1014 x 1015 page 111 2 good lamps
1018	~~Cedar~~ wood (Each wood) Cark same as 1014 x 1015 page 111 1 good lamp Cark 238
1019	Amaranth wood
1020	Cark same as 1011 — 1015 page 111 Cark 245
1021	Maple wood
1022	Cark same as 1014 x 1015 page 111 cark 238
1023	Black Walnut Cark same as 1014 x 1015 page 111 . cark 24[illegible]

Lamps

April 16 / 15

1024 White Holly old style clamp
1025 Card — 246

1026 Paper loops cut with mica
1027 Horseshoe mould cut by Vanelift
1028
1029 for steam stuff

1030	1038	1045	1055	1063
1031	1039	1047	1056	
1032	1040	1048	1057	
1033	1041	1049	1058	
1034	1042	1050	1059	
1035	1043	1051	1060	
1036	1044	1052	1061	
1037	1045	1053	1062	
		1054		

120

Clamps

April 24 1918

1067	White Holly wood
1065	Planed on shaper very thin and cut in new Horshoe mould
	R. 194 x 125
May 5th 18	
1066	Paper Carbons cut with new mould
1067	with new Platinum clamps
1068	Carbons have holes drilled in ends of Iron so that screw would go through them
1069	
Exposed Clamps	
1070	Copper clamps made same as regular platinum clamps with carbons from new mould
1071	H.G.
1072	Copper clamps made very short so that would have to drill holes in carbons for screw to go through
1073	carbon using them from new mould H.G.

122

Lamps

May 7th 1880

1074	Nickel clamp made short so that would have to drill Holes in carbon for screw to go through
1075 1076	Platinum clamps very short so would have to drill holes in carbon cut in old mould
1077	Copper clamps like 1075 and 1076 No good A. G.
1078	Copper clamp made same as Regular platinum clamps with carbon cut from old mould No good A. G.

124

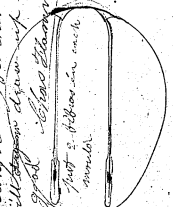
May 12, 1880.

Moulds for Bass fibres

Sticks long to lay fibres in 1/32 and pods will [illegible] 1/32 apart in each way

Steel Blades

Bass fibre in each mould



No. of moulds 18

Bass fibres

Lamps

May 12th 1880 25

Thos Edwards

1079
1080
1081
Plumbago on ends of 1081
May 18
1082 ✓
1083 ✓
1084 ✓
1085 ✓
1086 ✓
1087 ✓
1088 ✓
1089 ✓
1090 Broke
1091 Broke
1092 Broke
1093
1094
1095
1096
1097 1104
1099 1105
1101 1102
1102 6
1103

wood carbon loop made by Chas Dean on cam machine this was first 3 cut this shape

White Holley wood

Bass fibres carb in strips of nickel plate 5 inches long by 14 thousands thick with small shell clamps on ends of fibres

Att 10 1/2
May 18-1880

see page 124

29 Bass fibres lamps were made

126

Lemke

May 22 [illegible]
Chas Hammer

1107 Box carbons made from wood R 193
1108 Muffle wood R 195
1109 Muffle wood R 165 with short clamps
1110 Arbor wood R 135, did not carb- my good
1111 White Holly - R 230
1112 White wood R 175 Carb very good in shots of nickel

[redacted] where put in nickel Plate
[redacted] as Bass Tube [redacted] as on
Forge 125 or 124

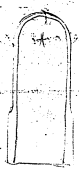
May 24

May 24
1113 Bx of wood
1114 These where
1115 Short carbons
1116 Could not get these in short clamps
are not flat on ends my easy to Rattle

1117 White Muffle
1118
1119

These where
Short carbons

These same as above



Lamps

March 31-1880

Chas Blomme

1120 Box wood

1121

1122 same on page 127 Lamps

1123 1126 White Holly

1124 1127

1125 1130 Their colors not known

1126 1131

1127 1132

1133

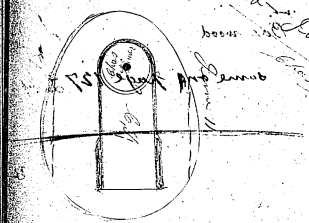
1134

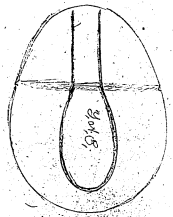
1135 Bass fibres 12/1000 square # 5/8 long
cut shape as

1136 Bark — in shape as
Old style Lamp

1137 1137 are and shaved up more than the other
1138 below 2 ozs split from bark to spring with
straight

Measured the Res — of one
was 330 Ohms





Lamps

June 17 1880

Chas Hammond

11139 June 17th Bass Fiber ¼ 5/8 long 2

11141 Bent in shape and carb—

11142 so [sketch] one end is

11145 held by a pin made from a common

11144 pin so that there would be a

11145 hole to draw a cord with the

other

11146 has a piece of flint glass between carbon same as this

Bass Fiber's

[sketch] same as a

bone

11147 has a piece of ising glass between carbons

[sketch]

132

June 17 1890

Lamps

Bass Thimmer

1149/1153
1150/1149
1150/1150
1151
1152

Bass fibre 4 5/8 long
with pith taken out
Bent this shape

1153 Bass fibre lamp has a partition made of sing gauge gauged be for Carbt O.K. by Jim Bradley

1154 Bass fibre but in two and Carb Edison wanted to try 2 Lables Broke one

1155 same as 1153 spotted all through are small in center through gauged by Jim. Bradley

1156 Bass fibres thickening from 1/1000 to
1157 9/1000 — 4 5/8 long

1158 Bass fibre No 2 small one one end and center but solid d

1159 Bass marked O.K. means all solid by Bradley

Clamps

June 11th 1880 3J

1160 — Bass fibre ← 2 9/16 →
2 9/16
put in new clamp has the smallest screw the we can make weight of clamp .174

1161 — same as 1160 only in side part was made straight
1161.A.

1162
1163
1164 — Bass fibres regular

1165 — No 5 O.K.
Bass fibres

1166 — Bass fibre . 1164
June 22 — small in one end only but solid

136

June 22 1880

Bass fibres Coarse by Van Cliff

June 22nd 1880 long IIII I one was very fine

" " short III

June 23 1880 IIII III long

8 small

11 X

Broke one

June 25 1880 IIII IIII coarse

III small

June 26th IIIIIII long

9 small

June 28 1880

coarse bark III IIII IIII III IIII

Clumps

June 22 1880

Chas Faulkner

1167 Bass fibres regular

1168

1169

long clump 1170 small long Bass fibres

short clump 1171 short clump 2 1/2 long Fine fibres short dense and irregular

1172

1173 Bass fibres regular

1174

1175

1176

June 23 1179 Bass fibres these are the finest of the

light color 1178 difference in color of fibre

1179 2 1/16 long by 1/16 thick all solid

had no [illegible] in them

1180 Bass fibres Regular

1181

Dark Color 1182 Bass fibres NH

1183 5 dark

fibres by Cochran see 1177

Lamps · June 23/85

Mas 1886 Planning

1185 Bass Fibres regular X
1186 cube

1187 Bass Fibres 4x5/8 long 1/1000 thick
covered with plumbago.

1188 Bass Fibres
1189
1190 Regular
1191

June 25

1192 2 Regular Bass Fibres
1193 Just in smallest classes
Fibres 4x5/8 long
1/1000 thick

1194 Bass Fibres 2x3/4
1195 just in small classes 1/1000
1196
1197 and strait glasses

140

Eight

Lamps

June 25 1896

Chas Hammer

June 25

1198 Bass fibres
two 2 disks of platinum
wire as this 1/16 apart

June 25

1199 Bass fibers. 4 3/8 long
12/1880

June 26th Platinum wires

1200 Bass fibres Regular
1201
1202
1203
1204
1205
1206
1207 these where put in large clamp
1208 put in small clamp
1209

142

Lamps

June 28 1900

Chas Flammer

June 28
1210 ~~Palmetto~~ leaf

1211

1212 12 x 12 and 4 5/8 long ends where 5/32 wide put in large clamp

June 28
small clamp 1213 Sours Bass Fibres or
" " 1214 Monkey ~~Bass~~ 12 x 12 and
1215 4 5/8 long narrow ends
large clamp 1216 2 long clamps x 2 short clamps

June 28
1217 Reglar Buss fibres
1218
1219
1220

June 28
1221 Bass Fibres 2 2 9/8 long 12/1000 x 12/1000 put in strait yokes large clamp

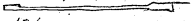
14X

Lamps

June 28/1892

Chas Flamme

1222 carbon cut from wilderman 4x 1/2 coils



12/1000 by 13/1000

got one out of 12 next Broke in Carbonizing put in long clamp

1223 Bass Fibres
1224 5/1000 by 13/1000 and 4 3/8 long put in long clamp

1225 Bass Fibres Regular in extra large clamp

June 30 Bass Fibres
long 1226 3/1000 by 13/1000 x 4 5/8 long
long 1227
short 1228 2 short and one long clamps

146

Lamps

July 1. 1886 [illegible]

Chas Flammy

July 1

1229 2 Bass Fibres

1230 10/1200 x 10/1000 by 4.5 [illegible] long

put in large clamps

July 1

1231 Bass Fibre Regular

1232 & screwed up clamp as

1233 tight as I could large clamp

July 2nd

1235 1237 Bass Fibres clamped very tight

1236 1238 large clamp with large screw

July 7th

1239 1241 Bass Fibres clamped in large

1240 1242 clamp with small screw

clamped as tight as screw

July 8 would allow

1243 Bass Fibres 6 in long

1244 by 13/1000 x 13/1000 3/4 in ends

put in large clamp

[illegible] July 8th 1886

Lamps. July 8 1898

Chas Thurnin

1245 Regular Bass Fibre 4, 3/4 long 3/100 & 12/1000 ammonia of salt

July 8 small clamps Platinum

Bass Fibres same as one is made of German glass one of Corning glass

German glass 1/24

Corning 1/47 glass

6 in long 4/100" 12/1000

July 8 1898

1248 Made from bamboo 4 × 7/8 long 3/100 & 12/1000 Ammonia large clamp

1249 2 Palmetto Fibres leaf

1250 Regular length split in large clamps

Corning glass 251

German glass 252

Regular bass fibres but is made of different glass 1 German glass 1 Corning

Lamps

July 20 1896

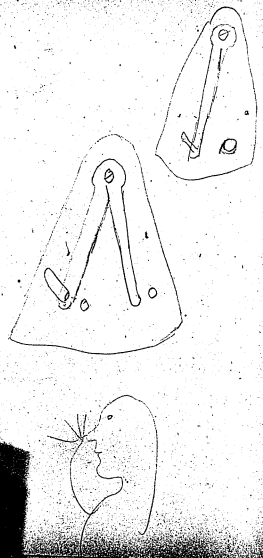
Chas Blanning

1253 made from bromlico taken from top of a fan
4 5/8 long 12/1000 x 12/1000
put in large clamp

1254 made from Rye straw
Broke after it was put in lamp in glass, Blowers House
made split on one side
4 5/8 long 12/1000 x 12/1000
put in large clamp

1255 large Bass Fibre
6 in long 12/1000 x 12/1000 put in large clamp

1256 made from Palmetto leaf 4 5/8 long 12/1000 x 12/1000
put in large clamp



Lamm Edwin Gabriel (orgn 1st Mass Cav) G.S.L. pottery July 10. 1880

Chas Thomas

1257	2 right bar. Bass Fibres
1258	put in same as me
	put paper carbon in
	old way of clamping
	2 5/8 long 12/1350 × 12/1350
1259	made from paper
	4 5/8 12/1000 × 12/1000
	put in large clamp
1260	Handle from Bamboo
	taken from top of a fan
	4 3/8 long by 12/1000 × 12/1000
July 13	
1261	made from Bamboo rod
1262	4 3/8 long 12/10.00 × 12/1000 square
1263	put in large clamp carbon
all right	was not very good

Edwin Gabriel Lamm
Edwin Lamm's Pottery
Salt Lake City, Utah Territory
W. H. Holmes

10-4

Lamps July 13 1880 15

1265 = Carbonization No 1
Book 105 Page 23
Bast Fibre – ends dipped
in Solution of Double Chloride NH_4
Ca_2 Pt before carbonizing

1266 Ditto

1267
1268
1269
1270 } Ditto

7271 } – Bast fibres (carbonized)
7272 } – ends dipped in Phl Pt
– uncarbonized –
Platinum on them
does not show very
good I guess it is platinum
~~Electr. but gave poor~~
~~good results~~

7273 Regular Bamboo fibre
– after putting in Stamps
I notched both ends split length
wise —

1274 } Bast fibres (carb-
1275 } ons soaked in ~~Pt~~ Chl
recarbonized — ends
dipped a second time
and recarb —

1276 Regular Bamboo fibre
1277 these are made with
fault in one side —
as per order 8 page 31
B 105 —

160

8

V1278 Bast fibres — Carb —
V1279 ends soaked in Chl Pt
3 times carbonizing after
every time.

Edison — at 16 candles clamp part Carbon
yellow is at 44 whitish yellow —

V1280 Old Paper Carbons —
V1281 — Carbonized — ends
~~V1282~~ soaked in Chl. Pt.
and recarbonized —

Note — Pt appears on them
in black powder and
persistently goes a
short way up fibre
although very careful
to keep off when doing —

July 17-1880

1282 Bamboo fibres 12X12m
1283 Dipped in Chl Pt
1284 Ends carbonized —
1285

1286 Bamboo fibres
1287 12X12 as usual but
ends so:
ends $\frac{3}{32}$ in wide
some of the ends left above clamp

1288 Bass fibres - carbonized -
1289 heated on plate - dipped
in boiling Syrup (saturated) stitched
off afterwards by Edison -

164

165

~1290	Bamboo fibre 12X12 M ends $\frac{3}{32}$ wide Shape
~1291 ~1292	Bast fibres 12X12 M Carbonized – afterwards slight amount of syrup on ends and platinum foil wrapped around ends
~1293 broke ~1294	Bamboo fibre 12X12 ends $\frac{2}{32}$ wide shape

July 19. 1880

1295 Bamboo 12 X 12 M
Carbonized flatways &c —

$\frac{3}{32}$ ends

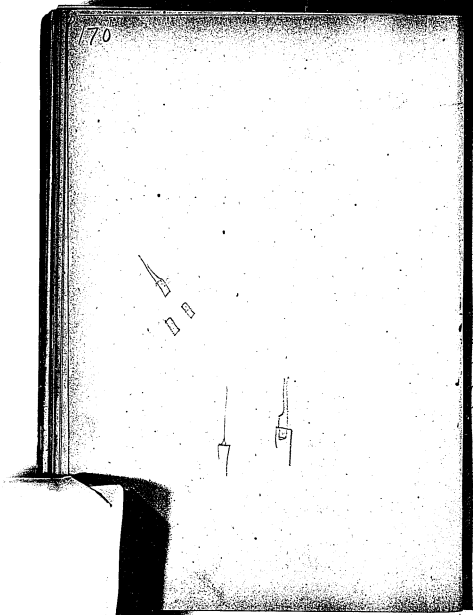
1296 Bamboo 12X12 M (regular)
Carbonized flatways —
ends coated with platinum for
previous to Carb — afterwards
the platinum seemed to have
come off but under microscope
it showed very finely divided
although in some places there
was not any

July 19. 1880

~1297 Broke — Bamboo 12×12 in Key — ends coated with Pt foil before carbonizing — afterwards it looked silvery grey on ends and under micro- showed only little of Pt.

only spot in clamping

~1298 Bamboo 12×12 Key. — with fault in one side



July 19 1880

1299	Bamboo 12 X 12 Key — Carbonized — — coated afterwards oil clear with Flat. Grid. 10% fore —
1300 1301 1302 1303 1304 ~~1305~~ Pipe ~~1306~~ Cuts	Bamboo 12 X 12 Regular
1307 1308 1309	Bamboo 12 X 12 made from the very thick bamboo — rather coarse

1310 Japanese Bamboo
1311 (Real) Reg. 12X12
1312
1313
1314
~~1315~~

1315 = Reg. Japanese Bamboo 12X12 with platinum wrapped round ends

July 22. 80

1316 Amaranth 12 X 12 Rep
We had to soak this in
alcohol to be able to sew
it — When it came out
it looked whitish — Under
the micro. showed little
white spots — Altogether
considerably rougher than
Bamboo —

176

177

July 22

1317 Ordinary Bamboo
12 X 12 ends .020 thick
76 wide

Turtle Wood after
carbonizing looks
very rough — large
recesses ~~[illegible]~~ in them
with a whitish stuff
stringy looking —

178

177

1318	Amaranth 12X12 Reg.
1319	White Holley
1320	12X12 Reg —
1321	Tulip wood 12X12 Reg
	Amaranth, White Holley and Tulip are not as coarse as Turtle wood but Coarser than Bamboo

180

(81)

July 24

1322	Real Bamboo
1323	Bast - Carbonized & ~~Hydro~~carbonized in Kerosene by the Current -
1324	Bast brought up in Kerosene for comparison only —.

182

183

July 26. 1882

1325	Manila libr. treats in Kerosene,
1326	Treates in Kerosene
1327	Mads in new moulds
1328	12 X 12 Roy — straight — as wide

1329	12X12 Bamboo-Reg- straight mould swimming in Kerosene
1330	12X12 Bamboo-Reg- ~~Straight~~ mould 1 side Carbonized with layers of Bituminous coal Under Micro- surface is entirely covered with very fine powdered coal

July 28 1880

1331	1in Wide Mould 25-M. ends Bamboo 12X12. Bituminous coal in mould. —
1332	1in Wide 25 thousandth ends Bamboo 12X12 Kerosene before and after Carbonizing Shows a little Carbon deposites on it but not very even

July 29

1333 1 in wide 12 X 12 Kerosene (Bamboo)

Brace
1334 Regular Bamboo
1335 Jap. 12 X 12 —
Brace 25 M. ends —

1336 wide straight mouth Bamboo 12 X 12 Reg a little tar in ends & keep from cracking

1337 long 6 in fibre
1338

July 30. 1880

1339 Bast fibres —
1340 Carbonized —
put in muffle and
gasolene passed in.
at high heat

1341 Bamboo 12 X 12
3/32 ends — turned in
2

1342 Pops. Carbon

192

1343	1 Long 6" Bamboo-Carb. put in receiver and ignited in Gasolene vapor. Showed dull metallic lustre
1344	Long bamboo 6 in.
1345	turned it
1346	
1347	
1348	
1349	
1350	ditto
	Aug 2nd 1880
1351	Bamboo 12 x 12 6 in
1352	Inspected by Batchelor
1353	previous to Chattanooga
1354	all straight & good
1355	
1356	gas furnace
1357	
1358	

Aug 5th 1880 197

1359 to 1365	same as before
1366	6" Bamboo carbonized in gas furnace
1367	6" Bamboo carbonized in gas furnace
1368	
1369	
1370	
1371	
1372	
1373	
1374	
1375	
1376	

1377 Bamboo fabric 12 X 12 Carbonized with small muffle heated one gas with one flame under the clamp end

1378 Bitts ~~Heated~~ under the round end only ~~Under~~ gas.

1379 This was the bottom one of a pile of nine that were carbonized together in gas furnace flatways. Running from 1 at bottom to 9 at top ——— They will all be put into the clamp the

Aug 5 1888

	Same way as that when the heads of screws or clamps are up the carbons in the same position that it had in the mould
1380	No 2 of this Ct
1381	No 4 of this Ct
1382 ✓	5
1383	7
1384	8
1385	3
1386	6
1387	9

a no spot

a bad spot – broke

Bad spot
good light
poor vacuum

1388 to 1398	6 × 6 Bamboo Cartonized in new gas furnace
1399 a, b, c	3 different loops from top of gas furnace see page 63 Book 105 =
1400 a, b, c	Ditto from bottom — 63 page Book 105
1401	1 put in ~~mould~~ ~~mould off~~ 12 × 12 – 6 in no previous heating — brought on high as possible not over a yellow in new gas furnace

1402	3 loops Exp. 1 page
1403	61 Vol 105
1404	
1405	1 loop of Ex No 8 P 63 Vol 105
1406	1 loop of Ex No 2 P 61 Vol 105
1407	1 loop of Ex 8 P 63 Vol 105
1408	No 9 exp.
1409	P 63 - Vol 105
1410	No 10 exp
1411	P. 71 Vol 105

Both bent

Bent some but not as much as 1408 to 9

1412	Exp No 3 P 61 Vol 105
1413	Exp No 2 P 61 Vol 105
1414	Exp No 3 P 61 Vol 105
1415 1416	2.6" Loops from out of gas ~~muffle~~ furnace brought up to high heat in muffle
1417	2 6 Loops ~~Exp~~ heated in preliminary gas then brought up to red in furnace

1418	6 × 6 = 6 Bamboo
1419	Carbonized Odyssey ✓
1420	
1421 ✓	
1422	
1423	
1424 ✓	
1425	
1426	
1427 ✓	
1428 ✓	
1429	
1430	
1431	
1432	
1433	
1434	
1435	
1436	These were carbonized by
1437	Van Pleet as the second
1438	mount full in Factory
1439	edgeways Aug 17 1911

208

209

1440 Bast fibre 4 a —
Brought up in muffle in
gasolene gas

1441
1442
1443
1444
1445
1446

these are same as on
page 207 — 1436 to 1446
german glass

1447 1448 1449 1450 1451	these were carbonized by Van Cleve as the first mould full in factory edgeways Aug 17, 1880 german glass
1452 1453	Bamboo carb by Van Cleve in old Factory marked 8/1000 by 15/1000 Aug 18. 1880 german glass edge ways
1454 1455 1456	Bamboo Carb by Van Cleve in factory marked 9/1000 by 15/1000 Aug 17th 1880 german glass edge ways
1457 1458	same as samps 1452 and 1453 Aug 18, 1880
1458 1456	Bamboo 9/1400 by 15/1000 same as 1454

ll wrinkled 1457
ge and longest than
the other 1458

~~1460~~
1461 Bamboo carbon as first lot done in new factory to put it on test pump had bad spots did not put it in

1462 same as above
this was not extra good but put it in

1463
1464 Bamboo long kind were bought up in test pump she no spots nickel. Clamps with iron screws

Use of Work Clean 18 Carbons
Marked regularly

good	bad	Spotted	Broken
IIIIIIII	IIII	IIII	III

rec-	14	carbons left	11	1880
good	bad	Broken spotted		

Sept 10. 1880

Chas Flammer

Mf of lamps	rec 15 stay white called	large carbons reg No 1	sept 10th 1880	
	good	bad	spotted	Broke
	THH THH	IIII	III	IIII
	10	4	3	4
	rec 14 stay	carbons regular	sept 10th 1880	
	good	bad	spotted	broke
	THH THH II	0	III	II
	12		3	2
	rec 15 regular	carbons 113	sept 10 1880	
	good	bad	spotted	broke
	THH THH III	II	III	THH II
	13	2	3	7
	rec 18 regular	carbons No 4	sept 15th 1880	
	good	bad	spotted	broke
	THH THH THH	1	III	THH I
	15	1	3	6
	rec 18 regular	carbons No 5	sept 15th 1880	
	good	bad	spotted	broke
	THH THH THH I	1	IIII	III
	16	1		

Sept 13th 1880 2/9

Chas Hammitt

rec 20 regulars good IIII IIII IIII IIII 20	carbons No 6 bad	sept—13th 1880 spotted III	broke IIII IIII
rec 17 regulars good IIII II Nickel IIII 16	carbons No 7 bad 1	sept—14th 1880 spotted nickel III	broke III.
rec 18 regulars good IIII IIII IIII III 18 Nickel clamps	carbons No 8 bad II	sept—14 1880 spotted III	broke III
rec 20 regulars good IIII IIII IIII III	carbons No 9 bad 1	sept—14 1880 spotted IIII	broke II
rec 20 regulars good IIII IIII IIII II8	carbons No 10 bad 1	sept—15 1880 spotted IIII III	broke IIII

220

Sept - 15 [illegible] 22

Regulars //// Chas Flanner

Vic 20	large	carbons of [illegible]	
Yankee	Sept 15	15	80
good	bad	spotted	broke
//// ////	/		

No 1 Contraction is twisted so as flow is not straight

Experiments with pumps

No 1 Has Contraction 2 m m
fall tube 5 m m
outside 9 lb
Runs through 12½ per min

No 2 Has Contraction 2 m m
fall tube 4 m m
outside 7 m m

AD 3 Has Construction 1.5 m m
fall tattie .4 m m
Outside .7 m m
Runs through

2 — C

Oct 21st 1880

Pumps

No 1

27

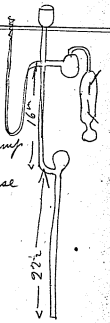
Contraction —

Fall tube —

Runs Mercury per minute
in Vacuo

Oct 20. got Vacuum 41 min without Pump

Oct 21. Could not get Vacuum as
Hg went back without cause
took down



228

Oct 21st 1880

Pump No 2

227

Contraction

Fall tube

Runs 2 Hz per min in Vacuo

Strikes 5 in down

Lamp 1 ~~Spark~~ Spark off 40 mins. Sealed off 2·27 mins

Lamp 2 ~~Sparks off~~ 1 hour 58 -

Lamp 3 — Broke on first heat Put on 8·50 Spark off 10-05 Off 11·50 time 3·

Lamp 4 11-50 4· 4·10

Lamp 5 4·05 7·15

Lamp 6 7·34 broke by current rising

Lamp 7 9·23 11·49

Lamp 8 8-15 Sealed off 1·15

Lamp 9 11·21

Lamp 10

8·13 — 10 27

10 34 — 2 33

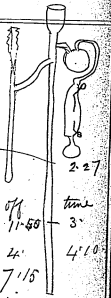
2 38 — 4 30

4 10 — 7 28

1 25 — 4 57

8 25 — 11·10

7 30 — 11 20



Oct 21 1880 231

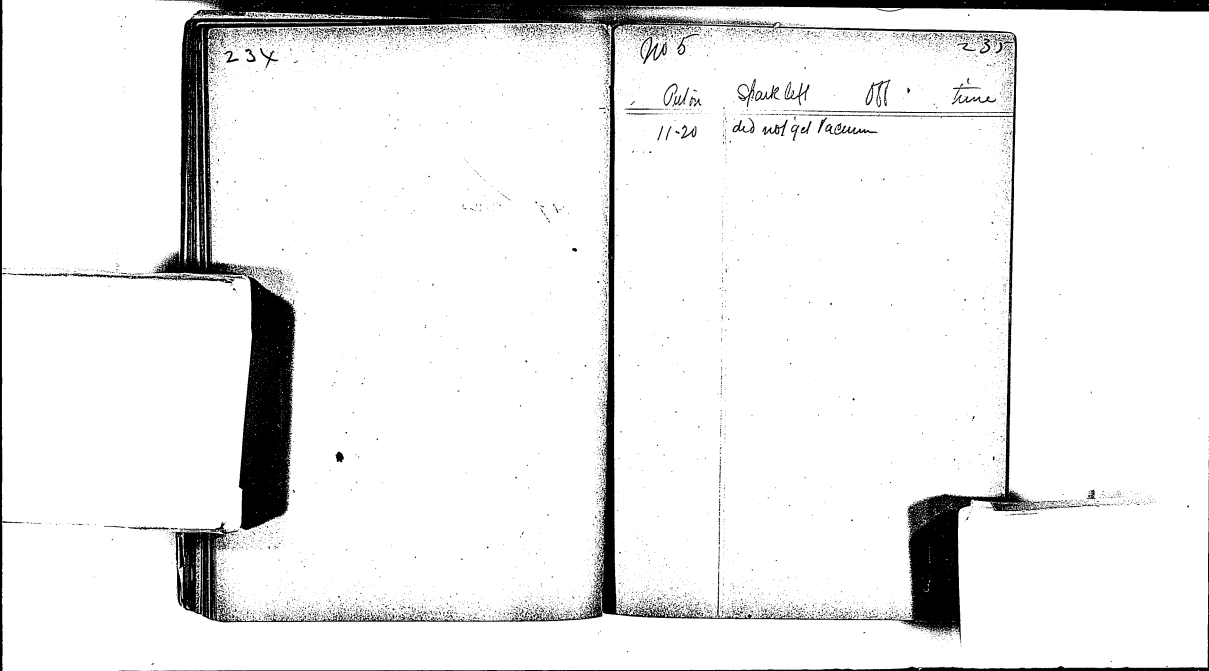
Pump #3 Range #2

Contraction
Tail Tube
Runs 44 per min
Stroke 6 inch

Pump 1 = piston 4'04
Spark gone Taken off 6 o'clock Mrs
1 Spare gone Sealed 44
2 — 7-50 8-50 11-15 3-35
3 11 15 4' 4'15
Pump Broke in handling

Pump No 4 — 8½ g per min
Pump goes in Vacuum

Put on	Spark Off	Off	time
8.50	— 11-45	— 4.45	
4.40		— 9-30	
8.45	Broke. 1.35		
1.40			
8.15	2.20		


23X
No 5
23
Pulse
Shark left
Off
time
11-20
did not get vacuum

No 6 Runs through

Starts	off
3·20	9.30
7.38	Broke by current
11·20	2 55
2-58	
8 18	Carbon broke 9 58
10·10	2· 15
2·19	4·23
1 40	4 08

238

237

Starts.	left	off
4:27		7-15
7:25		11-49
8 19		11 44
11 45		
8/4	10 27	
10 34	2 30	
2 34	4:57	
8 24	11.20	

Pump No 8. 241

Started	Off
5 0 8	9 3 0
9 3 8	11-35
8 15	Bright yet and started again 9 23

242

9

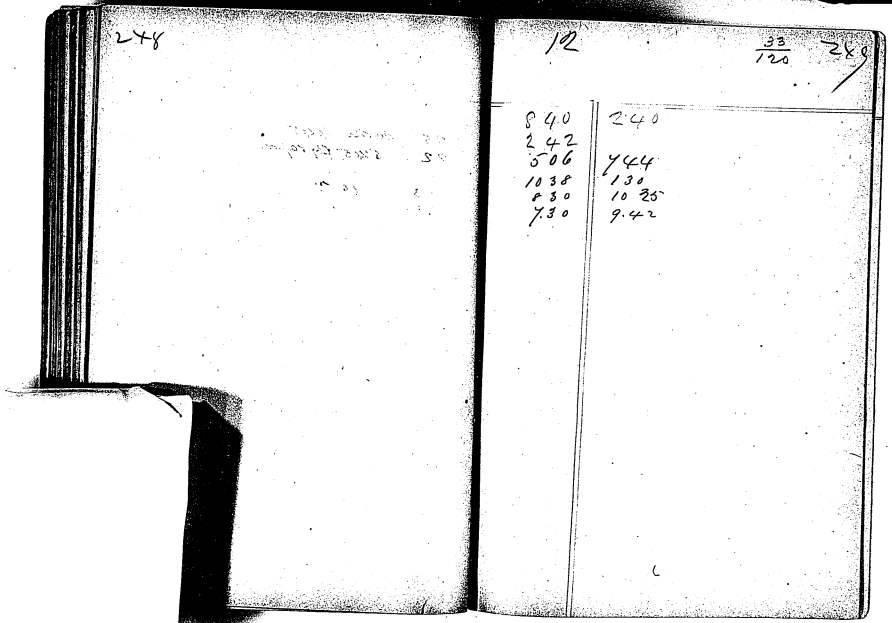
243

8 30	Broke current 9.15
9 20	Sealed off 1.27
1.30	
10 50	2.21
2 23	Back West 320

8 20	11 49
11 54	2 24
2 30	4 58
8 22	11 40

11 Bore of fall tube .105 247

5.26	
2 25	Broke 4.45
P 22	5.45 #4 repair



248

12

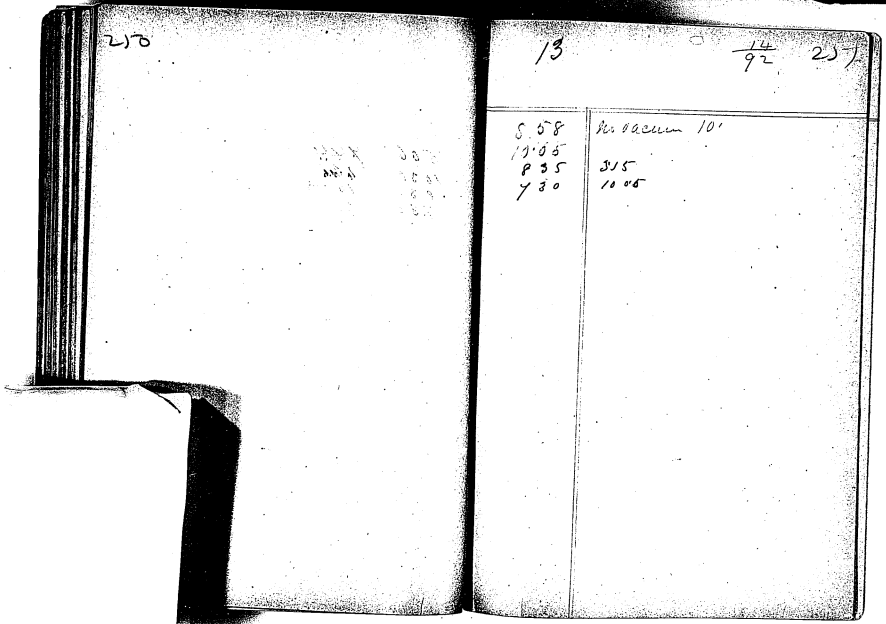
33/120

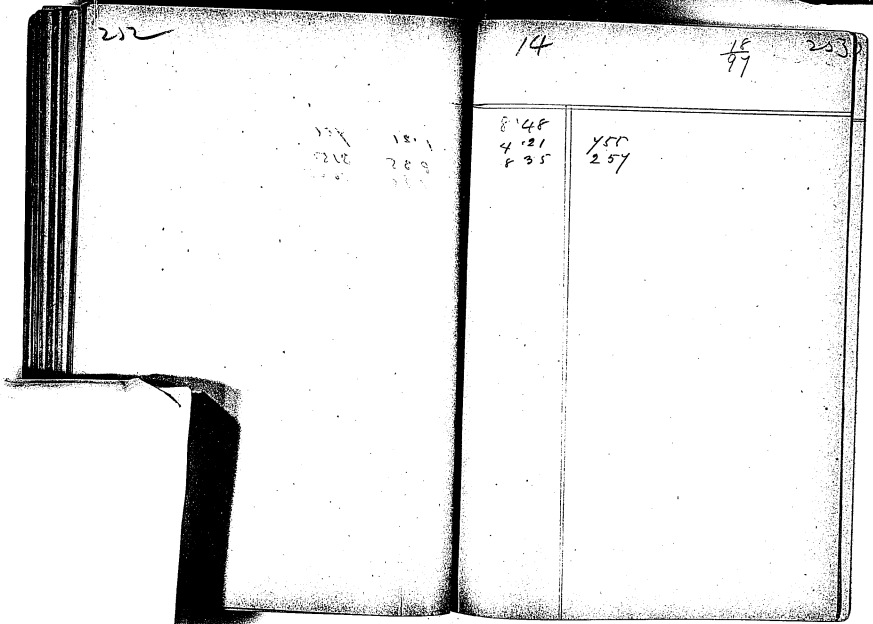
240

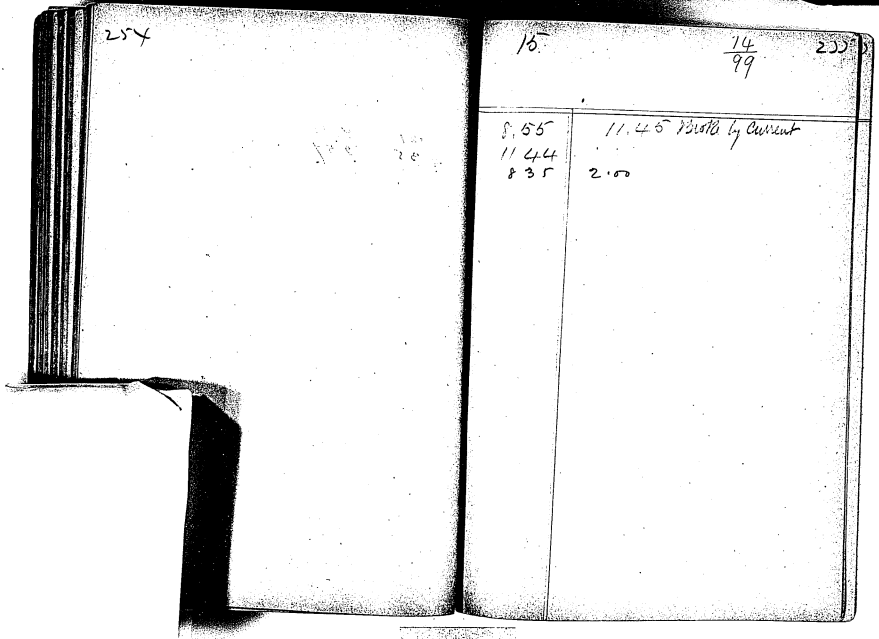
840
242
506
1038
830
730

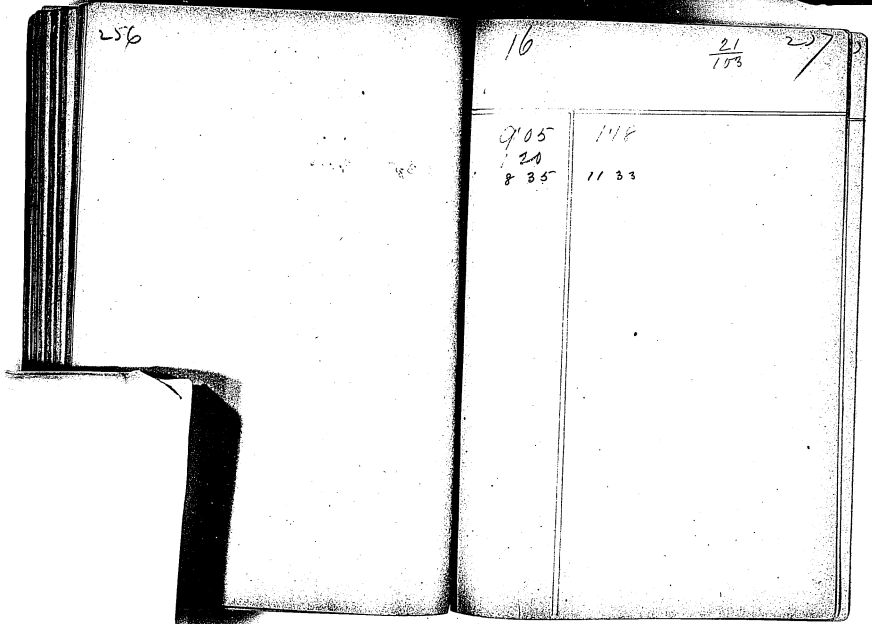
240

744
130
1035
942


210
13
14/92
237
5.58
11.05
8.35
7.30
Ki. vacuum 10.
3.15
10.05



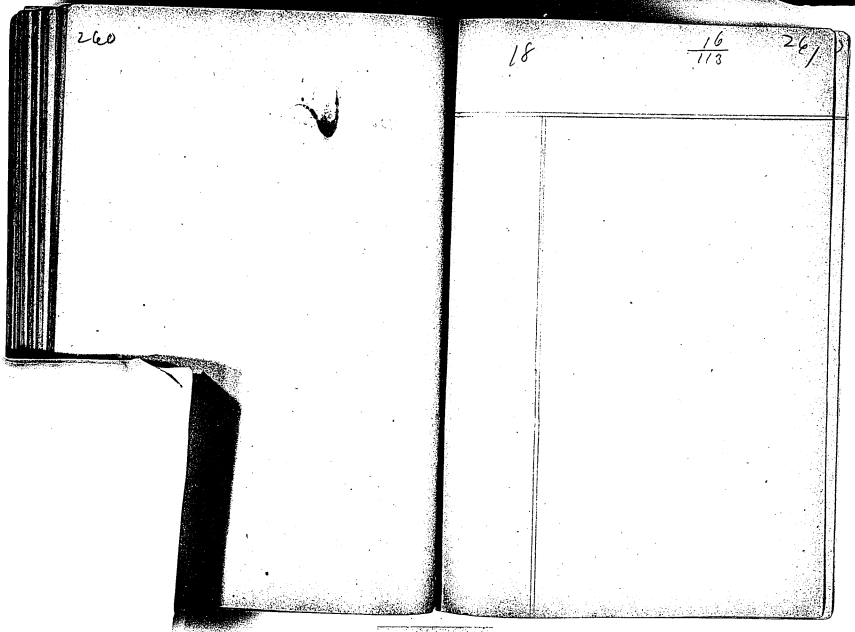

254
15
14/99
233
$.55
11.44
835
11.45 Brought by Current
2.00


256
16
21
1/8
9'05
20
8 35
11 33

17

1.30

10.35


260
18
16/113
261

262

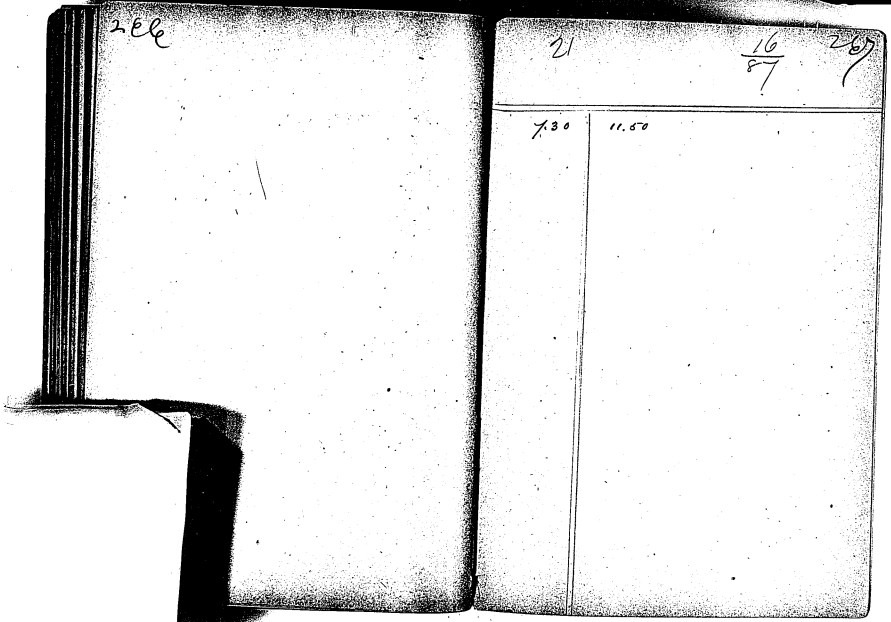
yes sir

Remove R

19

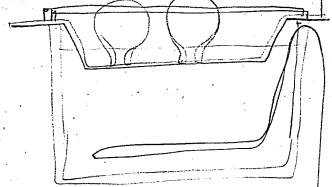
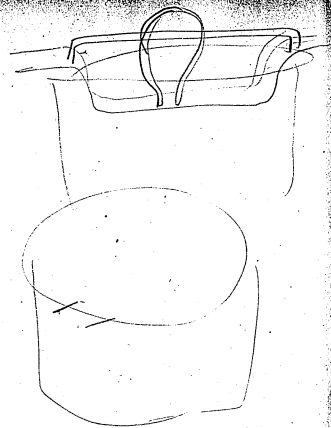
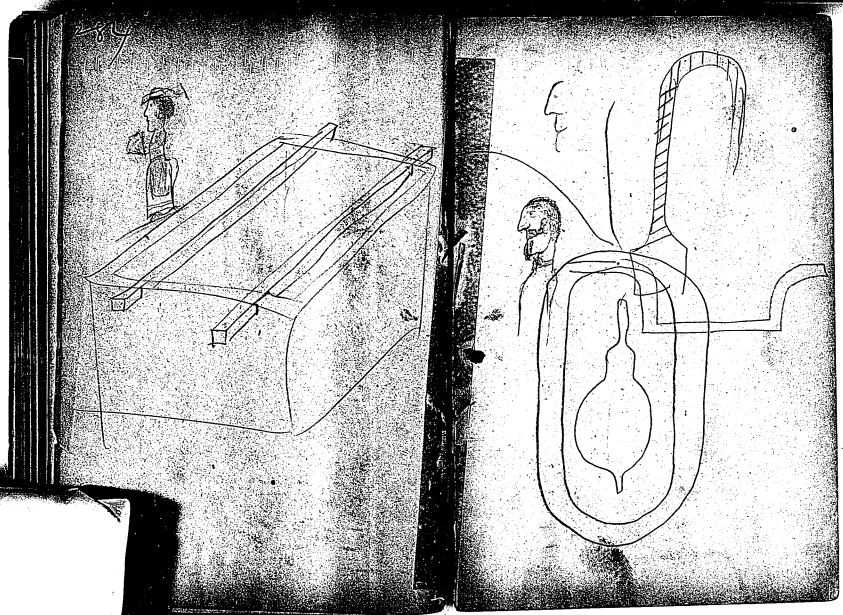
16/166

263


286
21
16
87
287
7.30
11.50

268

22

21
131

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